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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MASATO YOSHINO, HIDEAKI HIGASHIMURA,
MAKOTO NISHIKIMI, KEITA NAKANO and YOICHI MIYAWAKI

Appeal 2007-1919
Application 10/671,669
Technology Center 3600

Decided: January 8, 2008

Before FRED J. McKELVEY, *Senior Administrative Patent Judge*, TERRY J. OWENS, and JOSEPH A. FISCHETTI, *Administrative Patent Judges*.

FISCHETTI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants Yoshino, et al. seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1-3. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

This appeal arises from the Examiner's Final Rejection mailed on September 19, 2005. The Appellants filed an Appeal Brief in support of the appeal on March 20, 2006. An Examiner's Answer to the Appeal Brief was mailed on November 13, 2006. Appellants filed a Reply Brief on January 16, 2007 .

SUMMARY OF DECISION

We AFFIRM.

THE INVENTION

Appellants claim a brake system which is said to adjust the fluid pressure within the system in response to the brake stroke of the driver. (Specification 1:[0002])

Claim 1, reproduced below, is representative of the subject matter on appeal.

> 1. A braking system comprising:
>
> a brake pedal;
>
> a stroke sensor that outputs a stroke signal in response to a stroke of the brake pedal;
>
> an accumulator that accumulates a pressurized braking liquid;
>
> a proportional pressure controller that controls the pressure of the pressurized braking liquid, and supplies the pressurized braking liquid to a wheel, the proportional pressure controller including a spool; and
>
> a push rod connected to the brake pedal and movable between a first position spaced from the spool and a second position contacting the spool, wherein the push rod moves in response to the stroke of the brake pedal in order to contact and push the spool;

> wherein the proportional pressure controller controls the pressure of the pressurized braking liquid in accordance with the stroke signal and free from the motion of the push rod before the push rod contacts and pushes the spool, and in accordance with the stroke signal and the motion of the push rod after the push rod contacts and pushes the spool.

THE REJECTION

The Examiner relies upon the following as evidence of unpatentability:

Leiber	4,603,918	August 5, 1986
Takata	5,031,968	July 16, 1991

The following rejections are before us for review.

1. Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Takata.

2. Claims 2 and 3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takata in view of Leiber.

ISSUES

The first anticipation issue turns on whether pressurized braking fluid is inherent to a braking system such as recited in claim 1, and, if so, whether claim 1 should require that the proportional controller control pressurized brake fluid delivered only from the accumulator, or that it control any pressurized fluid within the system.

The second anticipation issue before us turns on whether Takata expressly or inherently discloses a proportional pressure controller which controls the pressure of the pressurized braking liquid in accordance with a stroke signal and free from the motion of a push rod before the push rod contacts and pushes the controller spool, and in accordance with the stroke signal and the motion of the push rod after the push rod contacts and pushes the spool.

The obviousness issue before us is whether the combination of Takata and Leiber under 35 U.S.C. § 103(a) would destroy the teachings of Takata.

FINDINGS OF FACT

We find the following facts by a preponderance of the evidence:

1. The Examiner noted the following correspondence between the elements of the claim 1 and the disclosure in Takata:

> Takata shows a braking system in figure 1, as in the present invention, comprising: a brake pedal 1, a stroke sensor 2 that outputs a stroke signal in response to a stroke of the brake pedal; an accumulator 5 that accumulates a pressurized braking liquid; a proportional pressure controller 9, 10, 18, 13 that controls the pressure of the pressurized braking liquid, and supplies the pressurized braking liquid to a wheel, the proportional pressure controller including a spool 9; and a push rod 8 connected to the brake pedal 1 and movable between a first position spaced from the spool as shown in figure 1; and a second

position contacting the spool, see column 6, lines 12-14… (Answer 3)

2. The Specification refers to the pressure stored in the accumulator 36 as "accumulated pressure" (Specification 7:[0014]) and not simply "pressurized braking fluid" as recited in claim 1. Further, the Specification distinguishes between" higher pressure" corresponding to the pressure developed from the auxiliary source and "lower pressure" developed by the master cylinder (Specification 28 :[0064]) .

3. The Specification describes that "[o]ne of the objects of the foregoing embodiments is to exploit the high pressure of the braking liquid stored in the accumulator sufficiently for braking the wheels while the electric system of the automobiles fails." (Specification 39:[0082]). Further, the Specification describes that using the high pressure source during non-failure modes is a feature which is additional to the object of powered braking during failure mode (Specification 39:[0082]).

4. We find the existence of pressurized fluid to be inherent in operational braking systems.

5. The Examiner noted that Takata shows in Fig. 1 that a pump, denoted as a P in a circle, is located upstream of an accumulator 5 (ACC), and thus introduces high pressure fluid into the dynamic pressure chamber 7 of the proportional controller when the valve is moved to an open to flow condition. (Answer 5)

6. In Takata when dynamic pressure is operational, the push rod 8

and the spool are "set apart from each other with a clearance…" (Takata, col. 6 ll. 17-20)

7. Takata discloses that the pressure control valve 4 is a component of a system which is responsible for feeding a desired pressure into a dynamic pressure chamber 7 of the proportional controller. (Takata, col. 4, ll. 29-37)

8. Claim 1 does not refer to "a normal operating condition" for the braking system.

9. Takata discloses that if the control unit 3 fails, "the pressure control valve 4 will open communication between the reservoir 6 and the low-pressure inlet 22 by the action of a spring therein (FIG. 2 shows this state)" and "the push rod 8 pushes the spool 23 directly." (Takata, col. 7 ll. 25-32)

10. Takata discloses that the "dynamic pressure fed to the dynamic pressure chamber 7 is transmitted through a push rod 8 to the pedal 1 to act as a counterforce to the force for depressing the pedal 1 on the one hand and acts on a dynamic pressure piston 9 on the other hand." (Takata, col. 4 ll. 38-42).

11. The return spring 35 in Leiber is shown in Figure 3 as biasing the push rod 34 outwardly of the housing 2.

PRINCIPLES OF LAW

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d

628, 631 (Fed. Cir. 1987). A claimed invention is not patentable if the subject matter of the claimed invention would have been obvious to a person having ordinary skill in the art. 35 U.S.C. § 103(a); *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007); *Graham v. John Deere Co. of Kansas City,* 383 U.S. 1, 13-14 (1966).

Facts relevant to a determination of obviousness include (1) the scope and content of the prior art, (2) any differences between the claimed invention and the prior art, (3) the level of skill in the art and (4) any relevant objective evidence of obviousness or non-obviousness. *KSR*, 127 S. Ct. at 1739, *Graham*, 383 U.S. at 17-18.

"[A] prima facie case of anticipation [may be] based on inherency." *In re King*, 801 F.2d 1324, 1327, (Fed. Cir. 1986). Once a prima facie case of anticipation has been established, the burden shifts to the Appellant to prove that the prior art product does not necessarily or inherently possess the characteristics of the claimed product. *In re Best,* 562 F.2d 1252, 1255 (CCPA 1977) ("Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product."). *See also In re Spada,* 911 F.2d 705, 708-09, 15 USPQ2d 1655, 1657-58 (Fed. Cir. 1990).

ANALYSIS

We affirm the rejection of claim 1 under 35 U.S.C. § 102 (b) as being

anticipated by Takata. We also affirm the rejection of claims 2 and 3 under 35 U.S.C. § 103(a) as being unpatentable over Takata and Leiber.

Appellants argue in their Appeal Brief, that claim 1 is written to cover a system "under normal operating conditions" versus one where failure has occurred in the dynamic pressure source. As such, Appellants argue Takata does not apply because it can only meet the requirements of claim 1 in the mode where the dynamic pressure component has failed. (Appeal Br. 8-10) However, we find nothing in claim 1 which defines a normal operating condition over one which is not. (FF 8) According to the Specification, Appellants' device has two operational modes similar to Takata, one in which dynamic pressure is operational, and another in which it is not. (FF 3)

Appellants specifically argue that "'the pressurized braking liquid' [recited in claim 1, lines 6-7] is defined in the claim as the pressurized braking liquid *which is accumulated in the accumulator*" and the controller of Takata controls non dynamic pressure not from an accumulator. (Appeal Br. 7, Emphasis original.) We disagree for three reasons.

First, we find that pressurized brake fluid is inherent to any operational brake system. (FF 4) The preamble of Clam 1 is directed to a braking system, and inherent in such systems is pressurized braking fluid.

Second, the Specification distinguishes between different types of pressure within the system, namely, "low pressure" attributable to pressure generated by the master cylinder delivered by pedal pushing action, and

"high pressure" attributable to that generated by the auxiliary source. (FF 2) In either case, the term "pressurized brake fluid" as recited in claim 1 is common to both sources of pressure. Also, the Specification is careful to name pressure attributable to the accumulator as the "accumulator pressure". (FF 2)

Third, Takata discloses a proportional controller which controls high pressure from an accumulator in one mode of operation. (Takata, col. 4, ll. 29-37, FF 5) Thus, contrary to Appellants' assertion, pressurized braking fluid from the accumulator is controlled by the proportional controller in Takata when pressurized braking fluid is introduced into the dynamic pressure chamber 7 of the proportional controller.

We define the proportional controller in Takata as being constituted by the structure enclosing the push rod 8, the chamber 7, and the spool 9, along with the pressure control valve 4.[1]. The pressure control valve 4 is responsible for feeding a desired pressure to the dynamic pressure chamber 7 of the controller. (FF 7) Thus, since the flow of high pressure fluid to the wheels 12 is controlled by the condition of the pressure control valve 4, it is read as part of the proportional controller driven by a signal from the ECU 3 when the dynamic pressure is operating. Takata thus discloses a proportional controller which controls pressurized braking fluid and supplies

[1] We disagree with the portion of the Examiner's finding (FF 1) that the valve 13 should be read as part of the proportional controller because it primarily serves as a downstream component in the system working with an automatic braking system.

the pressurized braking liquid to the wheels 12, 12 as required by claim 1.

Appellants also argue that "… that under normal operating conditions the push rod 8 of TAKATA does not move between positions spaced from the spool 9 and contacting the spool 9." (Appeal Br. 8) As found *supra,* (FF 8), claim 1 does not reference "a normal operating condition". What claim 1 does require with respect to the dynamic component of the system is that:

> (1) the proportional pressure controller controls the pressure of the pressurized braking liquid in accordance with the stroke signal and free from the motion of the push rod before the push rod contacts and pushes the spool, (2) and in accordance with the stroke signal and the motion of the push rod after the push rod contacts and pushes the spool.

Takata discloses part (1) of this limitation when dynamic pressure is operational and the proportional controller is controlling the pressure of the brake fluid via the valve 4 and the push rod 8 and the spool are "set apart from each other with a clearance…" (FF 6). Takata also discloses part (2) of this limitation when contact occurs between the push rod 8 and the spool 9. In that mode, the proportional controller does control pressurized brake fluid through the combination of a stroke signal and the motion of the push rod as required by claim 1. This is because Takata discloses that when the control unit 3 fails the resultant signal causes the pressure control valve 4 to "open communication between the reservoir 6 and the low-pressure inlet 22 by the

action of a spring therein (FIG. 2 shows this state)" and "the push rod 8 pushes the spool 23 directly." (FF 9)

Appellants argue that the Examiner erred in rejecting claims 2 and 3 under 35 U.S.C. § 103(a) as unpatentable over Takata in view of Leiber. Specifically, Appellants assert that the proposed combination "…would effectively *destroy the teachings* of TAKATA with respect to the disclosed benefits of its braking system and the preferred operation of the push rod 8, which receives counterforce from the dynamic pressure in chamber 7." (Appeal Br. 11, 12, Emphasis original.) We do not agree with Appellants here because the force applied by such a return spring would cause the push rod in Takata to be biased outwardly leaving the pressure in chamber 7 unchanged (FF 10, 11). Any difference in the system would be experienced by the user who would realize an increased resistance by the added spring when pushing on the pedal.

CONCLUSIONS OF LAW

We conclude Appellants have not shown that the Examiner erred in rejecting claim 1 under 35 U.S.C. § 102(b) as anticipated by Takata.

We also conclude Appellants have not shown that the Examiner erred in rejecting claims 2 and 3 under 35 U.S.C. § 103(a) as unpatentable over Takata in view of Leiber.

DECISION

The decision of the Examiner to reject claims 1-3 is AFFIRMED

Appellants are not entitled to a patent containing the claims on appeal.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

vsh
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